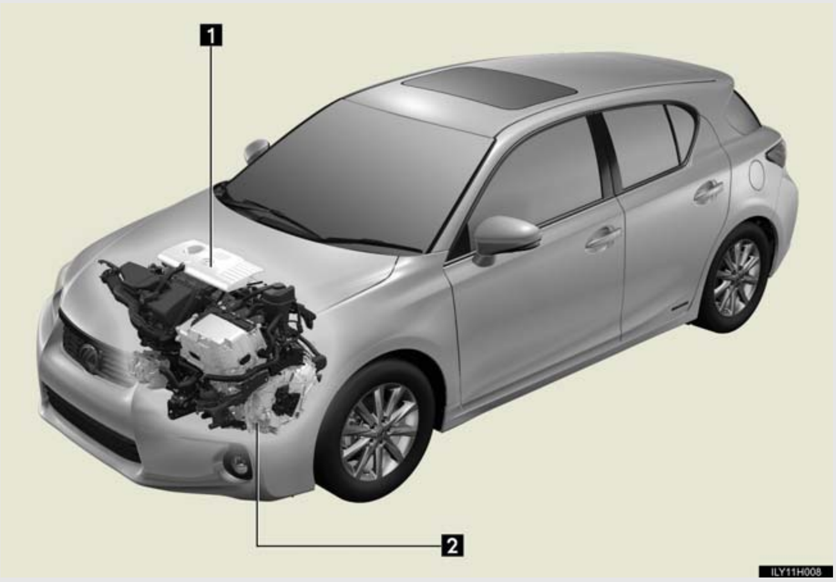
Hybrid system features

Your vehicle is a hybrid vehicle. It has characteristics different from conventional vehicles. Be sure you are closely familiar with the characteristics of your vehicle, and operate with care.

The hybrid system combines the use of a gasoline engine and an electric motor (traction motor) according to driving conditions, improving fuel efficiency and reducing exhaust emissions.



1 Gasoline engine

2 Electric motor (traction motor)

When stopped/during start off

The gasoline engine stops* when the vehicle is stopped. During start off, the electric motor (traction motor) drives the vehicle. At slow speeds or when traveling down a gentle slope, the engine is stopped* and the electric motor (traction motor) is used.

When shift position is in N, the hybrid battery (traction battery) will not be charged. Thus, shift to P when the vehicle is stopped. In addition, when driving in heavy traffic, use D or B.

*: However, when the hybrid battery (traction battery) need to be charged or while the engine is being warmed up, the gasoline engine may not stop automatically.

During normal driving

The gasoline engine is predominantly used. The electric motor (traction motor) charges the hybrid battery (traction battery) as necessary.

When accelerating sharply

When the accelerator pedal is depressed heavily, the power of the hybrid battery (traction battery) is added to that of the gasoline engine via the electric motor (traction motor).

When braking (regenerative braking)

The electric motor (traction motor) charges the hybrid battery (traction battery).

Vehicle proximity notification system

When driving with the gasoline engine stopped, a sound, which changes in accordance with the driving speed, will be played in order to warn people nearby of the vehicle's approach. The sound will stop when the vehicle speed exceeds approximately 15 mph (25 km/h).

■ Regenerative braking

In the following situations, kinetic energy is converted to electric energy and deceleration force can be obtained in conjunction with the recharging of the hybrid battery (traction battery).

● The accelerator pedal is released while driving with the shift position in D or B.

● The brake pedal is depressed while driving with the shift position in D or B.

■ EV indicator



The EV indicator comes on when driving the vehicle using only the electric motor (traction motor).

■ **Conditions in which the gasoline engine may not stop**

The gasoline engine starts and stops automatically. However, it may not stop automatically in the following conditions:

- During gasoline engine warm-up
- During hybrid battery (traction battery) charging
- When the temperature of the hybrid battery (traction battery) is high or low
- When the heater is switched on

■ **Charging the hybrid battery (traction battery)**

- As the gasoline engine charges the hybrid battery (traction battery), the battery does not need to be charged from an outside source. However, if the vehicle is left parked for a long time the hybrid battery will slowly discharge. For this reason, be sure to drive the vehicle at least once every few months for at least 30 minutes or 10 miles (16 km). If the hybrid battery becomes fully discharged and you are unable to jump-start the vehicle with the 12-volt battery, contact your Lexus dealer.
- If the shift position is in N, the hybrid battery (traction battery) will not be charged. Always shift the shift position in P when the vehicle is stopped. When driving in heavy traffic, operate the vehicle with the shift position in D or B to avoid discharging the hybrid battery (traction battery).

■ **Charging the 12-volt battery**

→P. 661

■ **After the 12-volt battery has discharged or has been changed or removed**

The gasoline engine may not stop even if the vehicle is running on the hybrid battery (traction battery). If this continues for a few days, contact your Lexus dealer.

Sounds and vibrations specific to a hybrid vehicle

There may be no engine sounds or vibration even though the vehicle is able to move. For safety, apply the parking brake and make sure to shift the shift position to P when parked.

The following sounds or vibrations may occur when the hybrid system is operating and are not a malfunction:

- Motor sounds may be heard from the engine compartment.
- Sounds may be heard from the hybrid battery (traction battery) behind the rear seats when the hybrid system starts or stops.
- Sounds may be heard from the transmission when the gasoline engine starts or stops, when driving at low speeds, or during idling.
- Engine sounds may be heard when accelerating sharply.
- Sounds may be heard due to regenerative braking when the brake pedal is depressed and accelerator is loosened.
- Other sounds, such as motors and mechanical noises, may be heard from the brake system when the brake pedal is depressed.
- Vibration may be felt when the gasoline engine starts or stops.
- Cooling fan sounds may be heard from the air intake vent on the side of rear right seatback.

■ **Vehicle proximity notification system**

In the following cases, the vehicle proximity notification system may be difficult for surrounding people to hear.

- In very noisy areas
- In the wind or the rain

Also, as the vehicle proximity notification system is installed on the front of the vehicle, it may be more difficult to hear from the rear of the vehicle compared to the front.

■ **Maintenance, repair, recycling, and disposal**

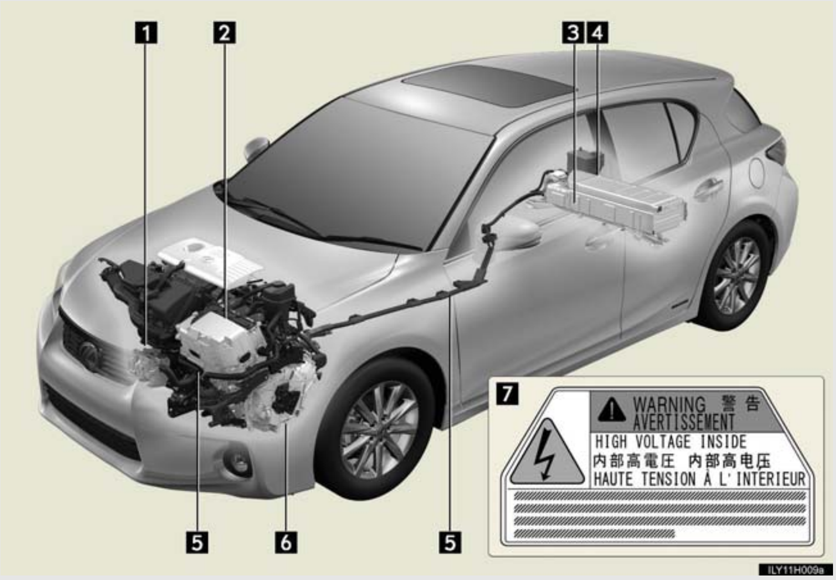
Contact your Lexus dealer regarding maintenance, repair, recycling and disposal. Do not dispose of the vehicle yourself.

■ **Customization**

Settings (e.g. on/off operation of the EV indicator) can be changed.
(Customizable features →P. 709)

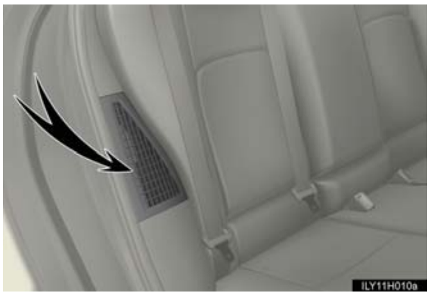
Hybrid system precautions

Take care when handling the hybrid system, as it contains a high voltage system (about 650V at maximum) as well as parts that become extremely hot when the hybrid system is operating. Obey the caution labels attached to the vehicle.



1. Air conditioning compressor
2. Power control unit
3. Hybrid battery (traction battery)
4. Service plug
5. High voltage cables (orange)
6. Electric motor (traction motor)
7. Caution label

Hybrid battery air vent



There is an air intake vent on the side of the rear right seatback for the purpose of cooling the hybrid battery (traction battery). If the vent become blocked, the hybrid battery may overheat, leading to a reduction in hybrid battery output.

Emergency shut off system

When a certain level of impact is detected by the impact sensor, the emergency shut off system blocks off the high voltage current and stops the fuel pump to minimize the risk of electrocution and fuel leakage. If the emergency shut off system activates, your vehicle will not restart. To restart the hybrid system, contact your Lexus dealer.

Hybrid warning message

A message is automatically displayed when a malfunction occurs in the hybrid system or an improper operation is attempted.



If a warning message is shown on the multi-information display, read the message and follow the instructions. (→P. 620)

■ If a warning light comes on, a warning message is displayed, or the 12-volt battery is disconnected

The hybrid system may not start. In that case, try to start the system again. If the "READY" indicator does not come on, contact your Lexus dealer.

■ Running out of fuel

When the vehicle has run out of fuel and the hybrid system cannot be started, refuel the vehicle with at least enough gasoline to make the low fuel level warning light (→P. 611) go off. If there is only a small amount of fuel, the hybrid system may not be able to start. (The minimum amount of fuel to add to make the low fuel level warning light go out is about 3.1 gal. [11.8 L, 2.6 Imp.gal.], when the vehicle is on a level surface. This value may vary when the vehicle is on a slope.)

■ **Electromagnetic waves**

- High voltage parts and cables on the hybrid vehicles incorporate electromagnetic shielding, and therefore emit approximately the same amount of electromagnetic waves as conventional gasoline powered vehicles or home electronic appliances.
- Your vehicle may cause sound interference in some third party-produced radio parts.

■ **Hybrid battery (traction battery)**

The hybrid battery (traction battery) has a limited service life. The lifespan of the hybrid battery (traction battery) can change in accordance with driving style and driving conditions.

⚠ CAUTION

■ **High voltage precautions**

The vehicle has high voltage DC and AC systems as well as a 12-volt system. DC and AC high voltage is very dangerous and can cause severe burns and electric shock that may result in death or serious injury.

- Never touch, disassemble, remove or replace the high voltage parts, cables or their connectors.
- The hybrid system will become hot after starting as the system uses high voltage. Be careful of both the high voltage and the high temperature, and always obey the caution labels attached to the vehicle.



- Never try to open the service plug access hole located in the luggage compartment. The service plug is used only when the vehicle is serviced and is subject to high voltage.

CAUTION

Road accident cautions

If your vehicle is involved in an accident, observe the following precautions to reduce the risk of death or serious injury:

- Stop the vehicle in a safe place to prevent subsequent accidents.
  While depressing the brake pedal, apply the parking brake and shift the shift position to P to stop the hybrid system. Then, slowly release the brake pedal.
- Do not touch the high voltage parts, cables and connectors.
- If electric wires are exposed inside or outside your vehicle, an electric shock may occur. Never touch exposed electric wires.
- If a fluid leak occurs, do not touch the fluid as it may be strong alkaline electrolyte from the hybrid battery (traction battery). If it comes into contact with your skin or eyes, wash it off immediately with a large amount of water or, if possible, boric acid solution. Seek immediate medical attention.
- If a fire occurs in the hybrid vehicle, leave the vehicle as soon as possible. Never use a fire extinguisher that is not meant for electric fires. Using even a small amount of water may be dangerous.
- If your vehicle needs to be towed, do so with front wheels raised. If the wheels connected to the electric motor (traction motor) are on the ground when towing, the motor may continue to generate electricity. This may cause an electricity leakage leading to a fire. (→P. 599)
- Carefully inspect the ground under the vehicle. If you find that liquid has leaked onto the ground, the fuel system may have been damaged. Leave the vehicle as soon as possible.

Hybrid battery (traction battery)

Your vehicle contains a sealed nickel-metal hydride battery. If disposed of improperly, it is hazardous to the environment and there is a risk of severe burns and electrical shock that may result in death or serious injury.

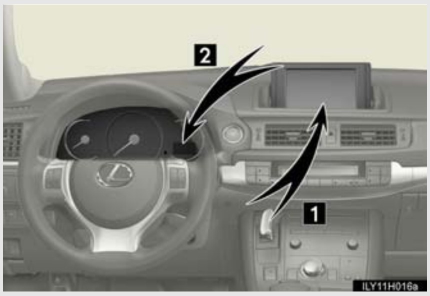
NOTICE

■ **Hybrid battery air vent**

- Do not put foreign objects near the air vent. The hybrid battery (traction battery) may overheat and be damaged.
- Clean the air vent regularly to prevent the hybrid battery (traction battery) from overheating.
- Do not wet or allow foreign substances to enter the air vent as this may cause a short circuit and damage the hybrid battery (traction battery).
- Do not carry large amounts of water such as water cooler bottles in the vehicle. If water spills onto the hybrid battery (traction battery), the battery may be damaged. Have the vehicle inspected by your Lexus dealer.

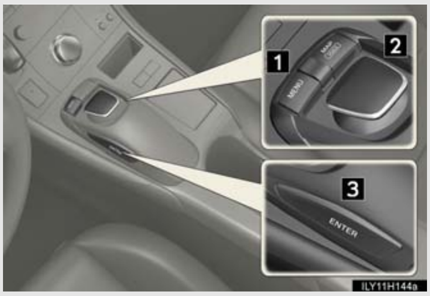
Energy monitor/consumption screen

You can view the status of your hybrid system on the multi-information display and the navigation system screen.



1 Navigation system screen (if equipped)

2 Multi-information display



Remote Touch*

1 "MENU" button

2 Remote Touch knob

3 "ENTER" button

*: For use of the Remote Touch, refer to "Navigation System Owner's Manual".

Energy monitor

Navigation system screen (if equipped)

STEP 1



Press the "MENU" button on the Remote Touch.



Select "Info/Apps" on the "Menu" screen.

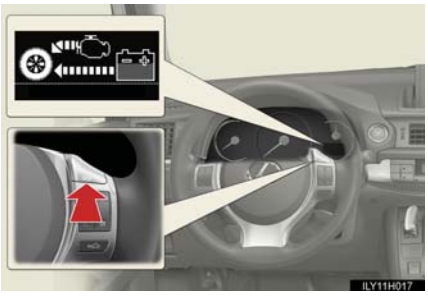
For vehicles sold in Canada, "Info" is used instead of "Info/Apps".



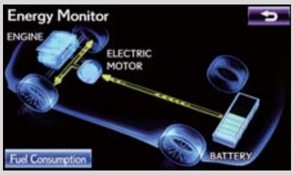
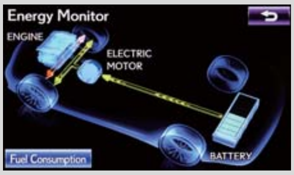
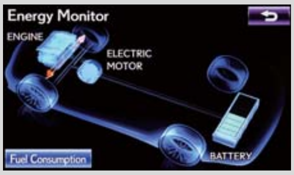
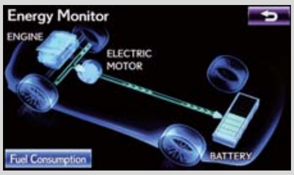
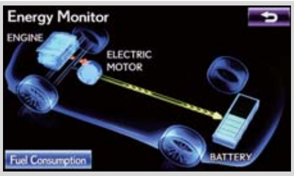
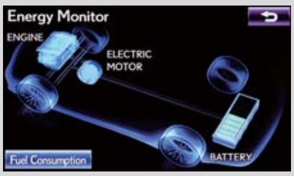
Select "Fuel Consumption" on the "Information" screen.

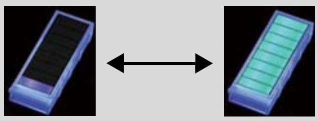
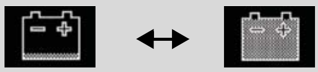
If the "Energy Monitor" screen is not displayed, select "Energy".

Multi-information display



Press the "DISP" switch on the steering wheel several times to select the energy monitor display.

	Navigation system screen	Multi-information display
When the vehicle is powered by the electric motor (traction motor)		
When the vehicle is powered by both the gasoline engine and the electric motor (traction motor)		
When the vehicle is powered by the gasoline engine		
When the vehicle is charging the hybrid battery (traction battery)		
		
When there is no energy flow		

	Navigation system screen	Multi-information display
Hybrid battery (traction battery) status	Low ↔ Full 	Low ↔ Full 

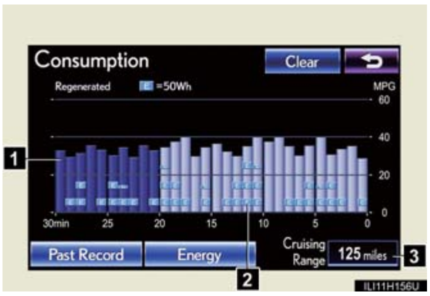
These images are examples only, and may vary slightly from actual conditions.

Consumption (vehicles with a navigation system)

STEP 1 Press the "MENU" button on the Remote Touch and select "Info/ Apps" ("Info") on the "Menu" screen.

STEP 2 Select "Fuel Consumption" on the "Information" screen.

If the "Consumption" screen does not appear, select "Fuel Consumption" on the "Energy Monitor" screen or "Consumption" on the "Past Record" screen.



1 Fuel consumption per minute

2 Regenerated energy per minute

E : One symbol indicates 50 Wh.

3 Cruising range

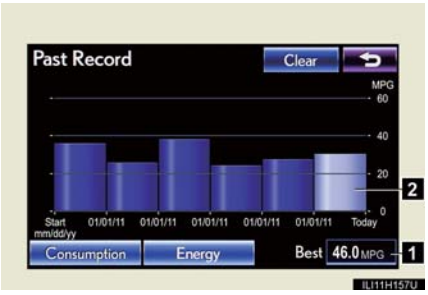
The image is example only, and may vary slightly from actual conditions.

Past record (vehicles with a navigation system)

STEP 1 Press the "MENU" button on the Remote Touch and select "Info/ Apps" ("Info") on the "Menu" screen.

STEP 2 Select "Fuel Consumption" on the "Information" screen.

If the "Past Record" screen does not appear, select "Fuel Consumption" on the "Energy Monitor" screen or "Past Record" on the "Consumption" screen.



1 Best past fuel consumption

2 Average fuel consumption

Use the displayed average fuel consumption as a reference.

The image is example only, and may vary slightly from actual conditions.

■ Resetting the data

Selecting "Clear" on the "Consumption" screen will reset the fuel consumption per minute and regenerated energy per minute.
Selecting "Clear" on the "Past Record" screen will reset the best past fuel consumption and average fuel consumption.

■ Cruising range

Displays the estimated maximum distance that can be driven with the quantity of fuel remaining.

This distance is computed based on your average fuel consumption.
As a result, the actual distance that can be driven may differ from that displayed.

Hybrid vehicle driving tips

For economical and ecological driving, pay attention to the following points:

■ Using Eco drive mode

When using Eco drive mode, the torque corresponding to the accelerator pedal depression amount can be generated more smoothly than it is in normal conditions. In addition, the operation of the air conditioning system (heating/cooling) will be minimized, improving the fuel economy.
(→P. 186)

■ Use of Hybrid System Indicator

The Eco-friendly driving is possible by keeping the indicate of Hybrid System Indicator within Eco area. (→P. 199)

■ When braking the vehicle

Make sure to operate the brakes gently and in good time. A greater amount of electrical energy can be retained when slowing down.

■ Delays

Repeated acceleration and deceleration, as well as long waits at traffic lights, will lead to bad fuel consumption. Check traffic reports before leaving and avoid delays as much as possible. When encountering a delay, gently release the brake pedal to allow the vehicle to move forward slightly while avoiding overuse of the accelerator pedal. Doing so can help control excessive gasoline consumption.

■ Highway driving

Control your speed and keep at a constant speed. Also, before stopping at a toll booth or similar, allow plenty of time to release the accelerator and gently apply the brakes. A greater amount of electrical energy can be retained when slowing down.

Air conditioning

Use the air conditioning only when necessary. Doing so can help control excessive gasoline consumption.

In summer: In high temperatures, use the recirculated air mode. Doing so will help to reduce the burden on the air conditioner and reduce fuel consumption as well.

In winter: Because the gasoline engine will not automatically cut out until the gasoline engine and the interior of the vehicle are warm, it will consume fuel. Also, fuel consumption can be improved by avoiding overuse of the heater.

Checking tire inflation pressure

Make sure to check the tire inflation pressure frequently. Improper tire inflation pressure can cause poor fuel consumption.

Also, as snow tires can cause large amounts of friction, their use on dry roads can lead to poor fuel consumption. Use a tire that is appropriate for the season.

Luggage

Carrying heavy luggage can lead to poor fuel consumption. Avoid carrying unnecessary luggage. Installing a large roof rack can also cause poor fuel consumption.

Warming up before driving

Since the gasoline engine starts up and cuts out automatically when cold, warming up the engine is unnecessary. Moreover, frequently driving short distances will cause the engine to repeatedly warm up, which can lead to poor fuel consumption.